13. Town of Oro Valley

The Town of Oro Valley is in northeastern Pima County, approximately six miles northeast of Tucson. Oro Valley is at an elevation of 2,260 feet and covers nearly 27 square miles. The Town of Oro Valley is home to a four-diamond resort hotel, and the largest employers include local country clubs, the local government and the local high school. The Town of Oro Valley service area is located north of Magee Road, west of Cañada Del Oro River, east of Thornydale Road, and south of Crown Ridge Way. Oro Valley was founded in 1974. Oro Valley Water Users (OVWU) currently serves over 13,500 homes and businesses in the fast-growing area within and around the Town of Oro Valley. More than half the deliveries are to residential customers, primarily single family residences. The remaining deliveries are to nonresidential users, including five golf courses. Deliveries to the golf courses constituted 29 percent of the total deliveries in the service area in 1998 (ADWR 1999). In 1998, OVWU used 5,911 af of groundwater, with a corresponding 215 gallons per capita per day (gpcd) usage rate. The utility has a current Assured Water Supply (AWS) designation from ADWR.

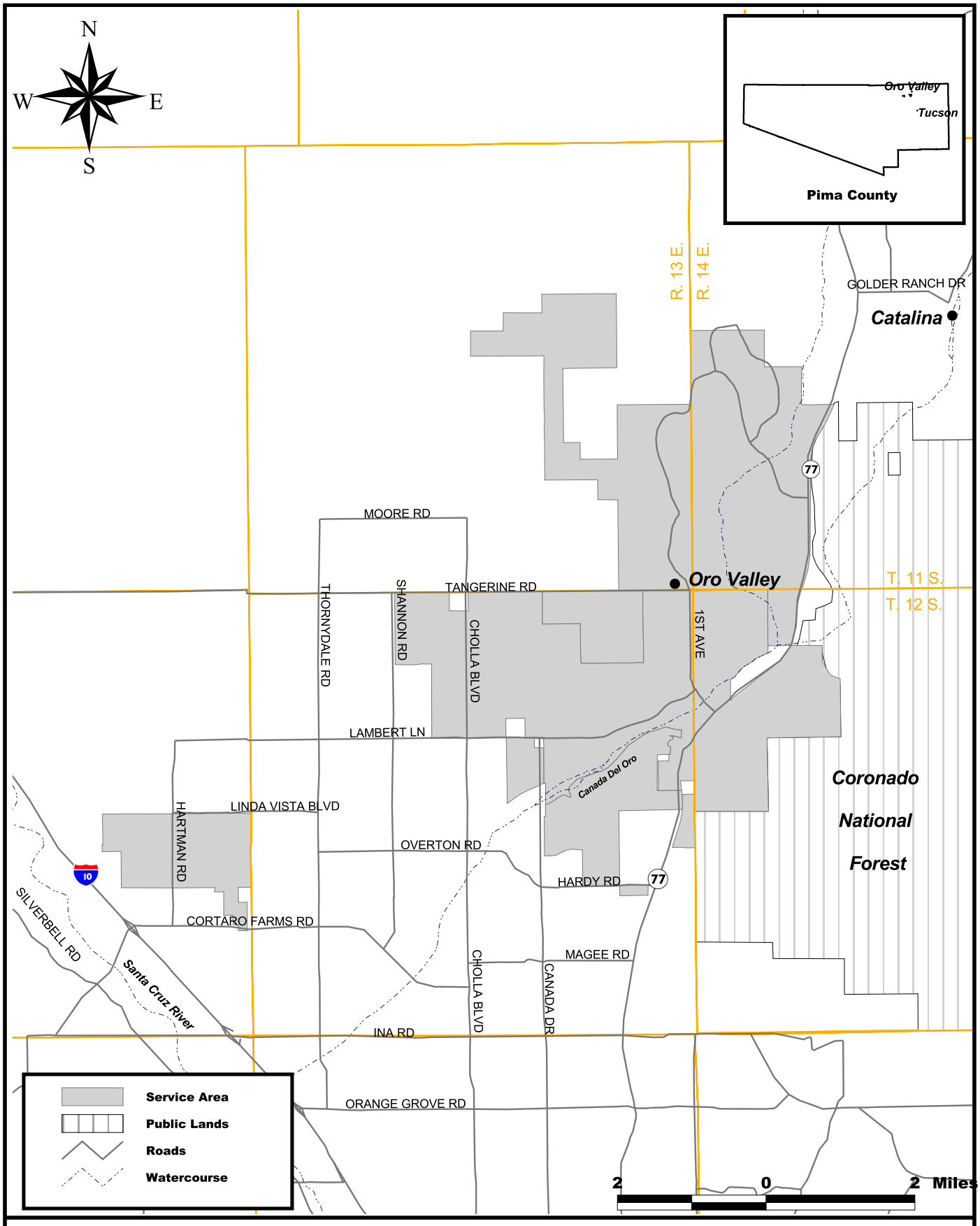
A. Plans to Take and Use CAP Water

The Town of Oro Valley currently has a contract for 2,294 af of CAP water. Under the Settlement Alternative, Oro Valley would receive 3,557 af of CAP water. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051). The CAP water would be used to supplement both current and projected water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Table L-M&I-75 outlines the proposed allocations by alternative.

Table L-M&I-75
CAP Allocation Draft EIS
Town of Oro Valley– Proposed CAP Allocation

Alternative	Allocation (in afa)	Priority
Settlement Alternative	3,557	M&I
No Action	0	-
Non-Settlement Alternative 1	3,557	M&I
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	0	-
Non-Settlement Alternative 3B	3,891	NIA
Existing CAP Allocation	2,294	-

Figure L-M&I-38 shows the service area for the Town of Oro Valley. The Town of Oro Valley is currently taking their CAP allocation through an in-lieu recharge arrangement with Kai Farms. The water is recovered using existing wells within Oro Valley. The additional CAP allocation could also be taken in this manner or through other direct or indirect recharge facilities or through a water treatment plant. Entities in the north Tucson



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CAP Allocation Draft EIS
General Location Map
Town of Oro Valley

June 2000

Figure #L-M&I-38

area are developing a regional solution. Oro Valley is continuing to develop alternatives for a comprehensive water management plan. Potable water alternatives that are being analyzed are recharge, treatment for direct delivery, continuing mining of groundwater and buying water from the City of Tucson. Renewable supply (CAP and reclaimed effluent) alternatives are being analyzed for turf irrigation (Seng 2000).

The Town of Oro Valley Potable Water System Master Plan has recently been approved. This comprehensive master plan would upgrade the water system design criteria and develop the water system requirements to meet projected growth demands. The plan defines improvements to system build out, including improvements to be included in the next five year Capital Improvement Program. The master plan also incorporates a single-source infrastructure plan for a direct delivery option of CAP water.

The OVWU currently has 22 wells, with a total production capacity of approximately 11,639 gpm, or about 18,776 afa. The system also has approximately 19 booster stations and 11 high-zone reservoirs. The wells are generally located within the Big Wash and Cañada Del Oro Wash geologic flood plain.

B. Population Projection

The estimated 2001 population level for the Town of Oro Valley is 27,362, and the estimated 2051 population level is 91,435.

C. Water Demand and Supply Quantities

As previously shown in Appendix C–M&I Sector Water Uses, it is estimated that water demand in the Town of Oro Valley would increase from 5,509 af in year 2001 to 18,411 af in year 2051. The projected water uses both by water source and alternatives are provided below in Table L-M&I-76. Based on anticipated water demands, CAP water allocated under the Settlement Alternative would provide 65 percent and 19 percent of the current estimated water supply required for the Town of Oro Valley for the years 2001 and 2051, respectively.

Table L-M&I-76
CAP Allocation Draft EIS
Town of Oro Valley– Projected Water Use

Alternative	Annual CAP Deliveries		Groundwater		Effluent		CAGRD (Groundwater)		Total Demand	
	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051
Settlement Alternative	0	5,851	5,509	0	0	0	0	12,560	5,509	18,411
No Action	0	2,294	2,294	0	0	0	3,215	16,117	5,509	18,411
Non-Settlement Alternative 1	0	5,851	5,509	0	0	0	0	12,560	5,509	18,411
Non-Settlement Alternative 2	0	2,294	2,294	0	0	0	3,215	16,117	5,509	18,411
Non-Settlement Alternative 3A	0	2,294	2,294	0	0	0	3,215	16,117	5,509	18,411
Non-Settlement Alternative 3B	0	5,851	5,509	0	0	0	0	12,560	5,509	18,411

Note: A more detailed breakdown of supplies may be found in Appendix C.

It is estimated that the demand for water at the end of the CAP contract period would be approximately 18,411 af. For all alternatives, there is estimated to be no unmet demand. In the Settlement Alternative, Non-Settlement Alternative 1 and 3B, 3,557 afa of demand are met by the additional CAP allocation. Alternatively, this 3,557 afa of demand are met by CAGRD membership under the No Action Alternative and Non-Settlement Alternative 2 and 3A.

D. Environmental Effects

The following sections include a general description of existing conditions relating to land use, water resources and socioeconomics for each entity. The following summaries also include a description of the existing conditions and brief description of the impacts to biological and cultural resources that would result from construction of CAP delivery facilities and conversion of desert and agricultural lands to urban uses.

1. Land Use

Land use data for the Town of Oro Valley were obtained based upon the review of 1998 aerial photographs and the result of the field surveys and habitat mapping completed as part of the biological analysis in this EIS. Table L-M&I-77 provides the projected acres of land within the Town of Oro Valley service area which are agriculture, desert or urban and the number of acres expected to change from the existing category for the years 2001 and 2051.

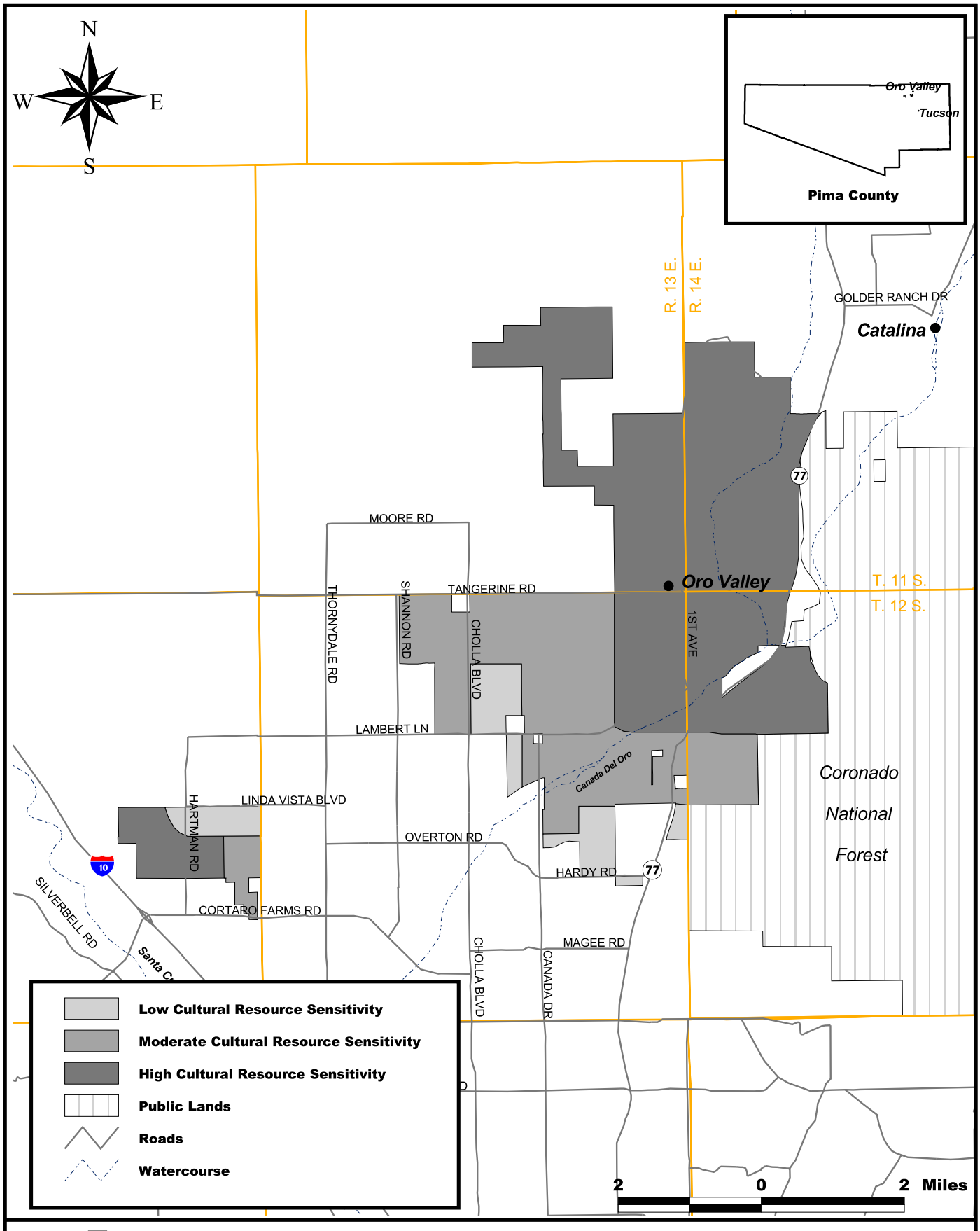
TableL-M&I-77
CAP Allocation Draft EIS Appendix L
Town of Oro Valley – Projected Land Use Changes Within the Service Area (in acres)

Alternative	Year	Agriculture	Agriculture Urbanized	Desert*	Desert Urbanized**	Urban	Changes in Urban Acreage
Settlement Alternative	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013
No Action	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013
Non-Settlement Alternative 1	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013
Non-Settlement Alternative 2	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013
Non-Settlement Alternative 3A	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013
Non-Settlement Alternative 3B	2001	0	--	1,013	--	1,695	--
	2051	0	0	0	1,013	2,708	1,013

2. Archaeological Resources

The Town of Oro Valley service area is of high-to-moderate cultural resource sensitivity and has been extensively surveyed. On the southeast, it borders the Sutherland Wash Archaeological District, a National Register property containing more than 40 sites. Prehistoric sites also abound along Cañada del Oro, Sutherland Wash, Big Wash, Chalk Creek, and the numerous other arroyos that drain the region. Protohistoric and historic trails, roads, and sites associated with farming, ranching, and prospecting might also be present within the Town of Oro Valley service area.

Cultural resource sensitivity areas in the Town of Oro Valley service area are shown on Figure L-M&I-39. Based on the limited data used to generate the cultural sensitivity designations, the potential for cultural resource impacts in the Town of Oro Valley service area is high. Mitigation of cultural resource impacts due to urban expansion would be determined by local jurisdictions and development of applicable permit requirements (such as the CWA Section 404 permit). Impacts on cultural resources due to future land use changes would be identical for each of the five alternatives. Mitigation for such impacts would be dependent on the requirements of the local jurisdiction. Once the plans for taking delivery of CAP water are finalized, Reclamation would carry out additional cultural resource compliance as appropriate, prior to water delivery.



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CAP Allocation Draft EIS
Cultural Resources
Town of Oro Valley

June 2000

Figure #L-M&I-39

3. Biological Resources

Existing Habitats

Low rocky hills of granite dominate the northeastern portion of the Oro Valley service area where typical Bursage/Foothill Paloverde Association occurs. Common co-dominants include velvet mesquite, creosote-bush, and Engelmann prickly-pear. Other common trees include velvet mesquite, desert ironwood, blue-paloverde, netleaf hackberry, and saguaro. In the deeper soils of the lower alluvial plains and valleys occurs a phase of Bursage/Foothill Paloverde Association somewhat transitional to disclimax grassland. Saguaros are much less common in this area. Blue Paloverde/Desert Ironwood Association habitat occurs along major washes, which are ephemeral, where more dominant species include burro-bush, desert-broom, blue-paloverde, velvet mesquite, foothill paloverde and netleaf hackberry. The habitat zones are shown on Figure L-M&I-40. Table L-M&I-78 provides the habitat acreages for the habitat zones described above.

TableL-M&I-78
CAP Allocation Draft EIS
Town of Oro Valley - Habitat Acreages

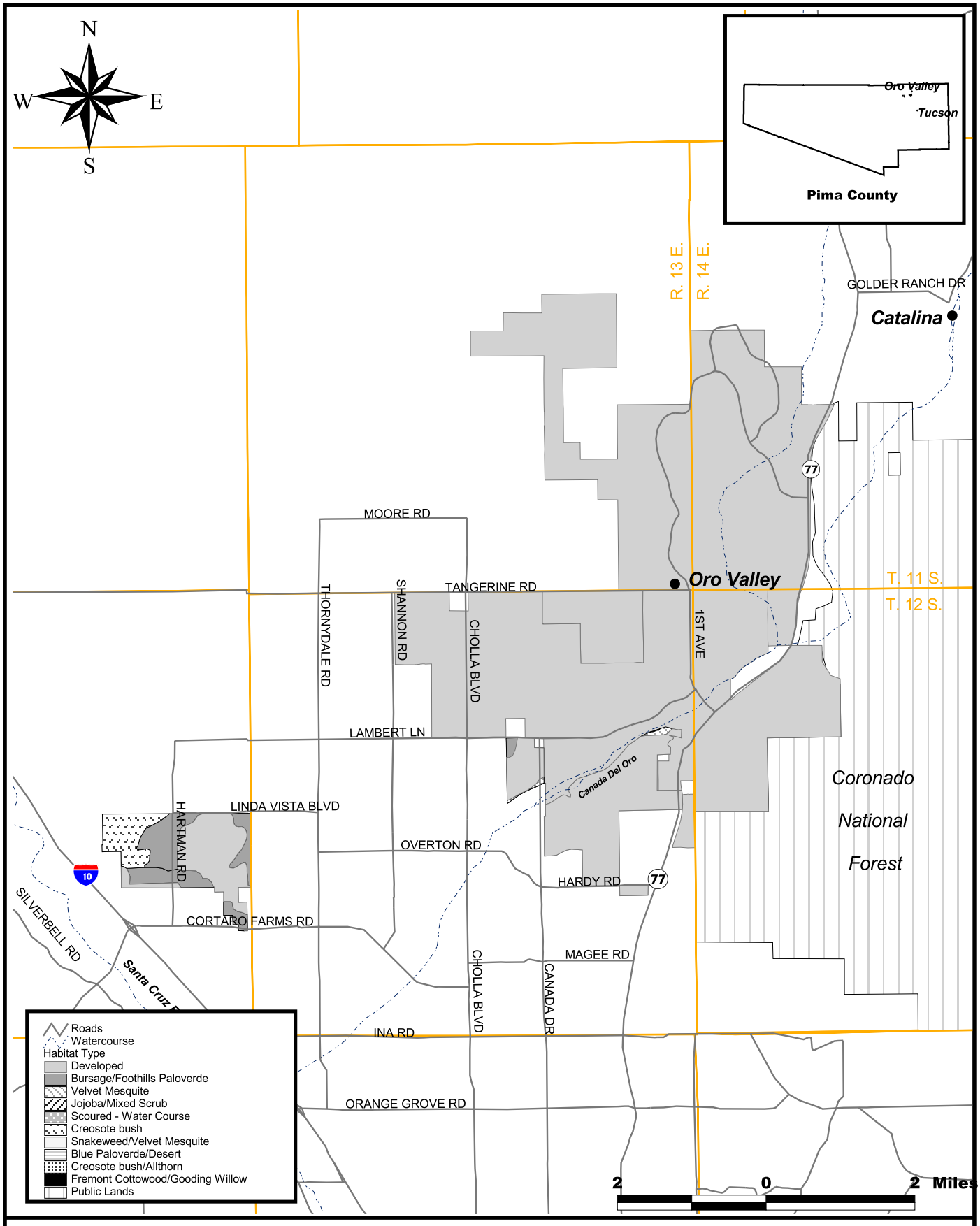
Vegetation Name	Acres
Developed	1,695
Bursage/Foothills Paloverde	774
Velvet Mesquite	21
Scoured, Washes and Creeks	1
Creosote-Bush	217
Total	**2,708**

Impacts to Biological Resources

Under the No Action Alternative, urban growth within the Town of Oro Valley service area over the 50-year study period would result in loss of an estimated 1,157 acres of Sonoran Desertscrub and associated wildlife resources. There may also be indirect impacts on wildlife occurring in the adjacent undeveloped habitat. Under the action alternatives, there is no difference in impacts from the No Action baseline. With regard to construction of CAP delivery facilities, Reclamation would carry out additional environmental review once plans are developed.

Potential T&E Species and Acres of Potential T&E Species Habitat

Because the allocation of CAP water has no effect on urban growth, there would be no effect on T&E species from the CAP allocation. The Town of Oro Valley would be responsible for complying with the relevant provisions of the ESA as it permits and approves future urban growth.



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CAP Allocation Draft EIS
Habitat Zones
Town of Oro Valley

June 2000

Figure No. L-M&I-40

The Town of Oro Valley service area is located within Pima County for which there are 16 T&E species listed by USFWS. However, potential habitat only exists for cactus ferruginous pygmy-owl. Approximately 795 acres of potentially suitable habitat for the cactus ferruginous pygmy-owl were identified within the Town of Oro Valley service area.

4. Water Resources

Demands in the Town of Oro Valley have historically been met primarily by pumping groundwater from the underlying sedimentary rocks. This reliance on groundwater has resulted in declining groundwater levels over time, and there has been subsidence associated with these lower groundwater levels. The concentration of TDS in the underlying groundwater is generally less than 1,000 ppm.

Estimated groundwater level impacts are summarized in Table L-M&I-79, which shows the estimated groundwater level change for the period from 2001-2051 as well as the groundwater level impacts or the difference between the change in groundwater levels for each alternative relative to the change for the No Action Alternative. Most of the Town of Oro Valley was contained in two groundwater sub-areas. The first number shown in Table L-M&I-73 represents groundwater levels for the eastern part of Oro Valley, and the second number represents the western part of Oro Valley. Declines in groundwater levels and groundwater impacts are similar in both the eastern and western part of Oro Valley.

Under the No Action Alternative, groundwater levels would decline by as much as about 88 feet from 2001 to 2051 in the western part of the town. A portion of the CAP water available to the Town of Oro Valley would be directly delivered, while a portion would be recharged in direct recharge facilities. The CAP water (and particularly the water directly delivered) tends to improve groundwater levels, but the continued decline in groundwater levels results from increased demands over time that would be met by increased local groundwater pumping. Substantial changes in groundwater quality would not be anticipated. However, there would be the potential for subsidence due to the lower groundwater levels.

Groundwater levels would also decline for all of the action alternatives. However, the declines under the Settlement Alternative and Non-Settlement Alternatives 1 and 3B would be substantially smaller than under the No Action Alternative, reflecting the additional allocation of CAP water received under those alternatives. For Non-Settlement Alternatives 2 and 3A, the Town of Oro Valley would not receive an additional allocation of CAP water, and the groundwater levels would be similar to the No Action Alternative.

Substantial changes in groundwater quality would not be anticipated for any of the alternatives. However, there would be the potential for subsidence under all alternatives.

Table L-M&I-79 CAP Allocation Draft EIS Town of Oro Valley –Groundwater Data Table		
Alternatives		
	Estimated Groundwater Level Change from 2001-2051 (in Feet)	**Groundwater Level Impact** (in Feet)**
No Action	-88 / -74	--
Settlement Alternative	-59 / -61	30 / 14
Non-Settlement Alternative 1	-62 / -62	27 / 12
Non-Settlement Alternative 2	-90 / -74	-1 / 0
Non-Settlement Alternative 3A	-90 / -74	-1 / 0
Non-Settlement Alternative 3B	-61 / -61	28 / 13

*****Values correspond to the East CMIDD and Oro Valley sub-areas, respectively, as discussed in Appendix I.

** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.

5. Socioeconomic

The same population growth is supported under all alternatives, including the No Action Alternative. However, the cost of providing water may vary by alternative. Costs were estimated, on a per af basis, for providing the proposed allocations and, in their absence, alternative water supplies. The alternative water supplies include joining the CAGRD and, if needed, treating and reusing effluent. The difference in cost for this small increment Town of Oro Valley's total water supply is considered insignificant. It should be noted that the increment of demand met by the proposed CAP allocation is approximately 19.3 percent of the total year 2051 demand for the Town of Oro Valley.

Table L-M&I-80
CAP Allocation Draft EIS
Oro Valley–Cost of Potable Water for Additional Allocation Increment

Alternative	Cost of Water ($ per af)	Water Source
Settlement Alternative	154[a]	CAP Allocation
No Action	214 – 218[b]	CAGRD
Non-Settlement Alternative 1	154[a]	CAP Allocation
Non-Settlement Alternative 2	214 – 218[b]	CAGRD
Non-Settlement Alternative 3A	214 – 218[b]	CAGRD
Non-Settlement Alternative 3B	154[a]	CAP Allocation

Notes:
a. Estimated average unit cost in year 2000 dollars.
b. Estimated range of unit costs in year 2000 dollars. Range is due to estimated change in groundwater pumping lifts during study period and does not include wellhead treatment costs.